

being anticipated by *Yoshida* (U.S. Pat. No. 6,137,295); claims 3-7, 12-14 and 21-23 stand rejected under §§102(a) and 102(c) as being anticipated by *Yoshida*; and claim 15 stands rejected under §103(a) as being unpatentable over *Yoshida* in view of *Talbot et al.* (U.S. Pat. No. 6,019,249) and *Steffan et al.* (U.S. Pat. No. 6,200,823).

Applicant traverses the finality of the Final Office Action because the Examiner introduced a new ground of rejection in connection with the Section 103(a) rejection, effectively repeated grounds of rejection for various claims and failed to respond to Applicant's previous arguments regarding these repeated issues.

The Examiner appears to base the propriety of the finality of the Office Action upon an assertion that the Applicant's refusal to resolve the Section 112(2) rejections necessitated the new ground of rejection. Applicant submits that the Examiner's assertion is unsupported by any rationale and because, as discussed below, the Applicant clearly answered the Section 112(2) rejection in a manner consistent with the requirements thereof.

Regarding the repeated rejections at pages 5-9 of the Final Office Action, the Examiner failed to address the Applicant's traversals and answer the substance thereof, as set forth in M.P.E.P. §707.07(f). *See also* 37 C.F.R. §1.104(a)(2). In this instance, the Examiner did not comply with this requirement, and the Applicant was not afforded the opportunity to judge the propriety of the rejections and to form a response thereto. Applicant submits that the Examiner's indication on page 9 of the Final Office Action that Applicant's arguments are moot is improper because many of the arguments directly apply to the rejections as maintained in the Final Office Action. Therefore, Applicant requests that the finality of the Final Office Action be removed, that the Examiner take reference to the traversal and that the Applicant have an opportunity to respond thereto, should the rejection be maintained.

The Examiner's comments regarding the Section 112(2) rejections are generally confusing, unsupported and not relevant to the requirements of Section 112(2). Specifically, the Examiner has purported to change the meaning of the claimed limitations based upon a rationale that improperly assumes that, because the Applicant allegedly refused to address the Section 112(2) rejections, the Examiner is allowed to change the meaning of the claim language. Applicant submits that this attempt to change the meaning of the claims is

untenable and contrary to acceptable practice in view of the M.P.E.P. and relevant case law. Applicant further submits that the Section 112(2) rejection was traversed in a manner consistent with the M.P.E.P. in the Office Action Response filed on November 26, 2002.

The text of the traversal of the Section 112(2) rejection is repeated below:

Applicant respectfully traverses the §112(2) rejection of claims 1, 16 and 20 as the claims distinctly point out the subject matter of the invention. At page 2, the Office Action incorrectly states that "BOX and SOI are both insulators." As well known and indicated in claim 1, "SOP" (silicon on insulator) refers to silicon material being located in a SOI structure ("SOI" is a term of art characterizing a type of IC structure). "BOX" refers to a buried oxide layer and, while it can be used to refer to a type of insulator (*i.e.*, oxide insulator) in an SOI structure, this term (BOX) does not necessarily connote an SOI structure since it may also be used in a non-SOI structure. Applicant submits that these terms are sufficiently particular and well known that all requirements of §112(2) are satisfied. With respect to the Office Action's assertion that these terms are not sufficiently cooperative elements, Applicant fails to recognize how claim 1 would present an issue since "BOX" is not used in either claim 1 or claim 16. With respect to claim 20, since this term has been canceled, there should be no further issue. Applicant requests that the rejection be removed.

The Examiner's question in connection with the Section 112(2) rejection was directed to whether or not a "region of the insulator of the SOI structure" is the same as "a BOX portion of the SOI structure." However, this question was unclear because the Examiner incorrectly asserted that while "BOX and SOI are both insulators, the SOI can be turned into active semiconductor layers." This assertion is incorrect because, as discussed in the previous traversal (repeated above), SOI and BOX are not the same. Therefore, while the insulator portion of the SOI structure may include buried oxide (BOX), it is not limited to BOX. For example, glass is an insulator that can be used with SOI structure, in connection with or as an alternative to BOX. In this regard, the Applicant has answered the Examiner's question by specifically indicating that, while BOX can be used as an insulator in the SOI structure, this is not necessarily so. Careful review of Applicant's traversal, repeated above, should make this clear. Therefore, the Examiner's rationale behind the modification of claims 1 and 16 is contrary to the plain language of Applicant's traversal. Moreover, the Examiner's purported modification would improperly narrow their scope and should not stand (*i.e.*, upon appeal).

Various other portions of the Examiner's discussion relative to the Section 112(2) rejection are also confusing. For example, the Examiner has further discussed various prior art recitations and the taking of "Official Notice" in connection with the Section 112(2) discussion. Applicant requests clarification as to the relevance of this discussion, if any, to claim rejections under Section 112(2). The Examiner has also asserted that any attempt to re-interpret the insulator portion of the SOI structure in claims 1 and 16 as being different than BOX will be considered as new matter. Applicant requests clarification and an opportunity to respond thereto, because the Examiner did not provide any support or rationale behind the assertion.

Moreover, as indicated in Applicant's traversal in the previous Office Action Response (and repeated above), Applicant fails to see how claims 1 or 16 would present an issue because the term "BOX" is not used. In addition, the Specification clearly indicates that oxide is only one type of insulator material that may be used in connection with the claimed SOI structure (*see, e.g.*, page 2, lines 14-17). Therefore, limiting the insulator of claims 1 and 16 to BOX is contrary to the plain language of the claims, contrary to the examples provided in the Specification and contrary to applicable case law.

In view of the above, Applicant understands that the Section 112(2) rejections have been removed, and further that the claimed limitations directed to an insulator layer are not to be limited to a layer including BOX.

Applicant respectfully traverses the rejections under 35 U.S.C. §102 because the Examiner has failed to adequately state the rejections in a manner consistent with the requirements of the M.P.E.P. and 35 U.S.C. §132. Specifically, the Examiner has indicated, in pertinent part, that claims 1-14, 16-19 and 21-23 stand "rejected under 35 U.S.C. §102(a) and 102(e)." Applicant submits that this statement is confusing and requests clarification. As presently stated, the Applicant is unsure as to whether the rejection is under Section 102(a) or 102(e); without such certainty, the Applicant is unable to judge the propriety of the rejection(s) and answer the substance thereof. Therefore, Applicant submits that the Section 102 rejections must be removed.

Notwithstanding the above, Applicant further respectfully traverses the Section 102 rejections of the claims for the reasons set forth below in connection with various ones of the claims.

Applicant maintains that the Section 102 rejections of claims 3, 7, 16, 17 and 22 are improper because the Examiner used the wrong test for establishing a *prima facie* Section 102 rejection; the Examiner failed to cite a reference that completely corresponds to the claimed invention. Regarding claim 3, as the Examiner acknowledged on page 6 of the Final Office Action, the use of scanning electron microscopy with the '295 reference requires the addition of subject matter not included therein (*i.e.*, in necessitating the taking of "Official Notice"). Therefore, the rejection relies upon a modification of the primary '295 reference to include scanning electron microscopy. Such modification is not within the scope of a Section 102 rejection. Specifically, the Examiner's assertion of Official Notice appears to be irrelevant to the §102 rejection, which requires complete correspondence to the claimed invention (*i.e.*, without requiring any outside reference); in this instance, the Official Notice is an outside reference. Regarding claims 7, 16 and 17, the Examiner relies upon an apparent inherency-type argument in support of modifying the primary '295 reference to include coupling a power supply (claim 7) or a detector (claims 16-17). Similarly, such modification of claims 7, 16 and 17 is also not within the scope of a Section 102 rejection. The rejection of claim 22 also relies upon a modification of the primary reference to arrive at limitations directed to obtaining an SEM image having light and dark areas indicative of regions of different voltage. This modification involves the taking of "Official Notice" with recitation of an outside reference, which is not within the scope of a Section 102 rejection, as discussed above. Therefore, the Examiner used the wrong test in attempting to establish a Section 102 rejection, and the rejection must be removed.

Applicant further traverses the Section 102 rejection because, as discussed above, the Examiner failed to cite elements of a reference that completely correspond to the claimed limitations. Specifically, the Examiner failed to cite any teaching or suggestion of limitations directed to using a scanning electron microscope (SEM) in analyzing a die from an induced detectable response. While the Examiner does mention a SEM, the discussion thereof is in the context of using SEM "to generate the electron beam EB" (see, *e.g.*, page 6, fourth paragraph of the Final Office Action). This recitation, however, does not teach or suggest the claimed limitations of the present invention. For instance, claim 3 is directed to using a scanning electron microscope in the context of analyzing a detectable response.

Referring to the portion of the '295 reference cited by the Examiner (column 5, lines 19-22), the electron beam generates secondary elections and does not analyze secondary electrons.

Regarding the Section 102 rejection of claim 13, Applicant respectfully traverses because the Examiner has failed to cite a reference that completely corresponds to the claimed limitations directed to the limitations "inputting signals known to induce a failure in the die." The Examiner's rejection asserts that stimulating a response "until a failure is induced" is a mere matter of choice. Applicant submits that this assertion not only fails to address the claimed limitations, but also fails to show evidence of how such limitations would be a "mere matter of deliberate choice." Specifically, the Final Office Action states that "whether or not to stimulate a response by using the DUT board 12, until a failure is induced in the die, is a mere matter of deliberate choice." Claim 13 is not directed to either the use of a DUT board or stimulating a response until failure is induced in the die. As such, no correspondence has been shown in the Office Action between the '295 reference and claim 13, and Applicant requests that the rejection be withdrawn. This failure of the cited reference to teach the rejected limitations in claim 13 is apparently acknowledged by the Examiner in the proffered "alternate" section 103 rejection, discussed in the next paragraph.

Regarding the Examiner's assertion to an "alternate" Section 103 rejection of claim 13 on page 7, Applicant requests clarification and an opportunity to respond thereto. The apparent Section 103 rejection has not been recited in a manner consistent with the M.P.E.P. Moreover, Applicant submits that the Examiner's assertion of obviousness fails to meet the test for establishing a *prima facie* Section 103 rejection, which requires evidence of motivation for modifying the primary '285 reference.

Applicant respectfully traverses the §103 rejection of claim 15 because the Examiner failed to present adequate evidence of motivation in support of the modification of the cited '295 reference. Recent case law indicates that evidence of motivation must be specifically identified and shown by some objective teaching in the prior art leading to the modification. "Our court has provided [that the] motivation to combine may be found explicitly or implicitly: 1) in the *prior art references* themselves; 2) in the knowledge of those of ordinary skill in the art that certain *references*, or disclosures in those references, are of special interest or importance in the field; or 3) from the nature of the problem to be solved, leading inventors to look to *references* relating to possible solutions to that

problem.” Ruiz v. A.B. Chance Co., 234 F.3d 654, 57 U.S.P.Q.2d 1161 (Fed. Cir. 2000). In this instance, the Examiner failed to show why one of skill in the art would look to modify the primary ‘295 reference to include subject matter directed to a comparison to a reference die. The Examiner’s citation of the *Steffan et al.* reference only recites rationale behind comparison between a defective and non-defective die in the context of that reference; no mention is made as to why one of skill in the art would modify the ‘295 reference in this manner. Specifically, the ‘295 reference plainly teaches various methods for detecting defects without using a non-defective die. For example, the ‘295 reference teaches away from such a comparison because it positively identifies the location and uses specific test signals as recited in column 6, lines 33-34, indicating that “it is necessary to designate a location to be observed.” Therefore, one of skill in the art would not be motivated to modify the ‘295 reference to include limitations directed to a comparison to a reference die.

Please charge Deposit Account number 01-0365 (TT3751) in the amount of \$276 for 6 new claims, two of which are independent claims.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at (651) 686-6633.

Respectfully submitted,

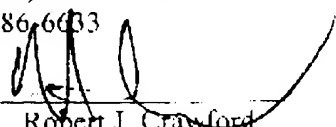
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On page 6, in the paragraph beginning on line 7:

FIG. 1 shows a portion of a flip chip die [die] 100 exemplifying one type of a variety of dies having SOI structure to which the present invention is applicable. The die of FIG. 1 is shown in an inverted position with the back side facing up, such as would be a flip die bonded to a package substrate. A very thin buried oxide (BOX) 150 is formed over silicon substrate 160, and a thin layer of silicon 140 is formed on the oxide 150. Source/drain regions 120 and 130 are formed in the thin layer of silicon 140. A gate 110, formed over the thin layer of silicon 140 and an intervening gate insulator layer 142, is used together with the source/drain regions to create a SOI transistor.